

REMARKS

The remarks presented herein attend to all issues in the pending Office Action of March 21, 2008. Claims 2-14 and 16-17 are still pending. And because all of the outstanding grounds for rejection, and restriction, are merely repeated from the previous Office Action, Applicant hereby incorporates by reference herein all of the previous meritorious arguments presented in traversal. Applicant respectfully requests reconsideration and withdrawal of both the outstanding Restriction Requirement, as well as all of the rejections under Section 103, as explained further below.

Amendments to the Claims

Claim 11 is amended herein to remove a grammatical redundancy. This amendment is purely formal in nature, is not in response to any substantive issue raised by the Examiner, and no other amendments have been made herein. Because this amendment addresses issues of pure formality only, entry of the amendment is both allowable and appropriate even after final action.

Election/Restriction

Applicant traverses the finality of the outstanding Restriction Requirement as being entirely non-responsive. In the Examiner's "Response to Arguments," the Examiner has merely repeated his previous remarks, for which Applicant has already established on the record to be applicable (at most) to dependent claim 3, but irrelevant to independent claim 2, which is clearly generic to each of independent claims

As the Examiner should have plainly seen, the substance of the elements featured in the grating horn of independent claim 2 can be found in each of independent claims 10, 11, 14, and 16, making claim 2 generic to each and every group as identified by the Examiner. This fact does not change with the Examiner's repeated identification of subject matter that only appears in claims that *depend from* independent claim 2. Claim 2 is still generic, and the Examiner is obligated therefore to allow all of the pending claims when claim 2 is found allowable.

Claim Rejections – 35 U.S.C. 103

Claims 2-5 and 7-10

Claims 2-5 and 7-10 again stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer (U.S. 4,852,956) in view of Walsh (U.S. 5,263,043). Applicant respectfully traverses this rejection for at least the reasons of record, and as follows. a *prima facie* case of obviousness has not been established, nor has the Examiner sufficiently rebutted any of the meritorious arguments presented by Applicant in traversing this rejection. Because all of the previous arguments have been incorporated herein by reference, the following discussion is directed mainly to clear errors presented in the "Response to Arguments" that appear on pages 2-4 of the outstanding Office Action.

The grating horn of the pending claims

With respect to the Examiner's response that "a recitation a grating horn (sic) has not been given patentable weight because the recitation occurs in the preamble," Applicant points out that only claim 2 features "a grating horn" in the preamble, but that the entirety of claim 2

nevertheless is a grating horn. The cited references that have no relation to grating horns are simply not analogous to the pending claims.

Regardless, Applicant further points out to the Examiner that these arguments were clearly presented in the form of a rebuttal to even a proper *prima facie* case of obviousness. Although Applicant still does not concede that such a case has even been made, even had one been made, it would still have to be withdrawn upon a sufficient showing that it would not have been obvious of one of ordinary skill in the art to make the proposed combination of references to reach the present claims.

The Examiner is reminded that this rejection is based on obviousness, and not anticipation. The advantages that the present claims can realize over the prior art are a factor the Examiner is required to consider when presented with a rebuttal of an asserted case of obviousness. There is no requirement that such advantages be affirmatively recited in the claims themselves. Nevertheless, such advantages – when unchallenged on the record – will be sufficient to overcome *prima facie* obviousness.

Claim 2 of the present Application clearly has the advantageous function to operate as a grating horn. Regardless of the fact that the actual words "grating horn" appear in the preamble to claim 2, the record is undisputed that claim 2 both is, and functions as, a grating horn. The record also clearly shows that neither of the cited art references, whether taken alone or together, can amount to a grating horn. The Examiner has never attempted to challenge this fact, and therefore this significant deficiency in the cited art remains unchallenged on the record.

It was therefore inappropriate for the Examiner to simply dismiss Applicant's rebuttal out of hand by asserting that certain words (which do appear) in claim 2 were "not accorded any patentable weight." This assertion is irrelevant to the rebuttal case that established how it simply would not have been obvious to one of ordinary skill to combine the two references as proposed. Such a combination could never reach the present claims. Therefore, the obviousness rejection must be withdrawn at least for the reason that it has been sufficiently overcome on rebuttal, which rebuttal still remains unchallenged on the record.

Phase orientation of the claimed grating elements

In response to Applicant's argument that neither reference teaches or suggests a pair of grating elements being oriented in phase, the Examiner does not actually assert that either reference teaches or suggests any such thing. Instead, the Examiner merely asserts that Kramer teaches a pair of grating elements that "are *adjustable*," and that therefore such elements are "*capable* of being arranged in phase." (Emphases added). The Examiner has thus admitted – at least implicitly – that the references do not actually teach or suggest the claimed elements. The Examiner has only asserted that such claim features *could be possible* with the prior art. The Examiner should know, however, that obviousness may not be established on such assertions.

What the Examiner is actually attempting to do in this case is assert (without actually saying so) a case of inherency against the claims. Just because Kramer teaches "adjustable" elements, the Examiner has not cited to any specific teaching from Kramer that teaches in-phase orientation as being within Kramer's range of adjustability. The Examiner could only assert that in-phase orientation was part of Kramer's device if such features were inherent. By the

Examiner's own express admission, however, inherency cannot be established for this element of the claims.

According to the Examiner's own words, Kramer's pair of grating elements are only "capable of being arranged in phase." In other words, such a result is merely *possible* with the cited reference. Inherency, however, "may not be established by *probabilities or possibilities*. The mere fact that a certain thing *may result* from a given set of circumstances is not sufficient." In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (emphases added); see also Section 2112(IV) of the MPEP. Thus, the Examiner has acknowledged that the in-phase orientation features of the present claims are not actually found in the references, and the Examiner has clearly not established that such features must result from the cited features of Kramer.

Accordingly, the asserted case of obviousness is deficient on its face under the requirements of Section 2143.03 of the MPEP. All of the recited claim elements are not taught or suggested in either of the cited references, taken alone or together. For at least these reasons therefore, the rejection must be withdrawn.

Rulings in both the rectangular and triangular components (claim 10)

Applicant is simply at a loss to understand the Examiner's statement "The claim [10] does not require the rulings to be inside the rectangular and triangular components, but instead requires triangular and rectangular components and that the grating element is ruled." This statement makes no sense, given the express language of claim 10, which is listed in its entirety as follows:

10. A grating horn, comprising:

a flat base; and

a pair of grating elements attached to the flat base, each of the grating elements being ruled with a grating period, the grating elements oriented in phase and in substantial symmetry about a normal to the flat base, such that an electron beam interacting with the grating elements produces Terahertz radiation,

wherein the grating elements form a V-groove and vertex to the flat base, and

wherein each of the grating elements comprises a triangle component and a rectangular component, **wherein each of the grating elements is ruled in the triangular and rectangular components** and parallel to the flat base.

Claim 10 unambiguously features that "each of the grating elements is ruled **in** the triangular and rectangular components. Applicant therefore demands that the Examiner justify the assertion that "The claim does not require the rulings to be inside the rectangular and triangular components." Perhaps the Examiner is interpreting the word "inside" to have a different meaning than the word "in," which is actually recited in the claim? Applicant submits that such an interpretation would be entirely unreasonable. Regardless, as the Examiner can see from the last Response, Applicant argued that the rulings were "in" the respective components, and not "inside," even though the meaning should be the same for purposes of the argument.

Because the continued rejection of claim 10 is therefore based on a clearly erroneous reading of the claim language, this rejection is also deficient on its face, and should be withdrawn for at least these reasons, in addition to those discussed above (claim 10 originally depended from claim 2, and was rewritten in independent form in the last Response).

Claim 6

Claim 6 again stands rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer in view of Walsh, and further in view of U.S. Patent No. 4,972,075 (hereinafter, "Hamada"). Applicant therefore traverses this rejection as well for at least the reasons of record, those discussed above (claim 6 depends indirectly from independent claim 2), and as follows.

A *prima facie* case of obviousness still has not been established against claim 6 individually, and neither of the Examiner's responses to Applicant's meritorious traversals addresses the actual arguments that were presented. The cited "motivation" from Hamada still has nothing to do with the proposed *combination* of references, and the Examiner has not even addressed the argument that the proposed combination will result in an unworkable device.

With respect to the Examiner's first response to the arguments traversing the rejection of claim 6 individually, Applicant does not dispute that Hamada claims to produce a "sharp moire pattern" according to its disclosure. Applicant does dispute though, that this disclosure, by itself, teaches or suggests any motivation to one of ordinary skill to *combine* the references as proposed. Section 2143.01 of the MPEP requires that the cited motivation must support the combination itself, and not merely the relative utility of a particular reference alone. Hamada simply does not teach or suggest that the cited "sharp moire pattern" will be somehow improved when combined with either of Kramer and Walsh, or both together. Nothing in Hamada even suggests that the same pattern will even result when so combined. Accordingly, the express requirements of Section 2143.01 have not been met, and the individual rejection of claim 6 is still deficient on its face for at least these additional reasons.

With respect to the Examiner's second response to the arguments traversing the rejection of claim 6 individually, the Examiner has not challenged, or even addressed, Applicant's arguments that the proposed combination of Kramer, Walsh, and Hamada would yield an unworkable device. Instead, the Examiner has merely quoted *verbatim* the first two sentences of Section 2145(III) of the MPEP, as if this subsection somehow countered the Applicant's arguments. It does not.

Had the Examiner considered the next two sentences of Section 2145(III), the Examiner would have read the explicit caution "However, the claimed combination cannot ... render the reference inoperable for its intended purpose. (Emphasis added, see also Section 2143.01 of the MPEP). According to this portion of the MPEP therefore, the language quoted by the Examiner does not effectively challenge Applicant's argument. Quite the contrary. Section 2145(III) clearly states that it is the very argument made by Applicant that counters the Examiner's "test." Accordingly, Applicant's additional arguments against the proposed combination of Hamada with Kramer and Walsh remain entirely unchallenged on the record, and thus the outstanding obviousness rejection of claim 6 has also been sufficiently rebutted to warrant withdrawal of the rejection for at least these reasons as well.

CONCLUSION

In view of the foregoing Amendments and Remarks, Applicant submits that all of the issues arising from the Office Action dated September 21, 2007 have been addressed. If the Examiner considers that any issue remains outstanding, or if questions arise regarding this Response, the Examiner is invited to contact the undersigned attorney.

No fees are believed due; however, should any fees be deemed necessary in connection with this Amendment and Response, the Commissioner is hereby authorized to charge deposit account 12-0600.

Respectfully submitted,
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